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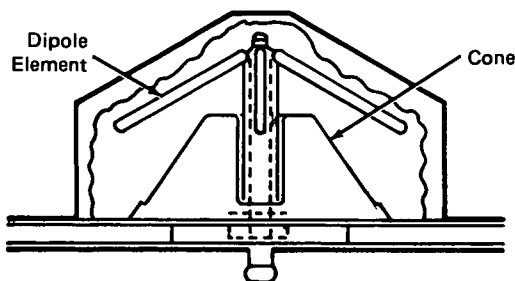
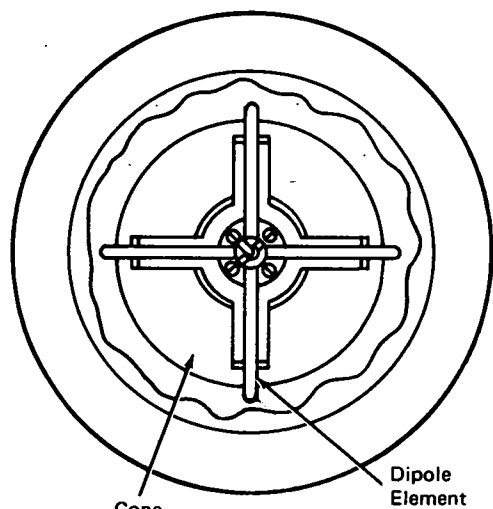
Langley Research Center



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Flared-Cone Turnstile Antenna

A new innovation in transmitting antennas has produced a flared-cone turnstile antenna, which exhibits improved beamwidth characteristics when compared to a conventional cup turnstile antenna. This new antenna was devised for use with the Viking UHF Relay-Link System, which requires a wide beamwidth antenna because of vehicle interferences; and it was found that a conventional turnstile in a cup-and-crossed-slot antenna could not meet the performance requirements.



A Flared-Cone Turnstile Antenna

The flared-cone turnstile antenna (see illustration) consists of a conventional feed with the dipole elements tilted downward, at an angle of 30° , in combination with a truncated slotted cone. Comparative radiation-distribution tests, which were conducted with the conventional cup turnstile antenna and the flared-cone turnstile antenna, show that this new antenna provides an on-axis gain of +5.2 dB, an on-axis axial ratio of 1.3 dB, and improved beamwidth characteristics.

This antenna could be used in any application where increased UHF beamwidth is desired. Possible applications include aircraft, communication links, ground omniranges, and satellites. It is also possible that the antenna could be adapted for use in television transmission and receiving.

Note:

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Patent status:

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